

REMARKS

Claims 1-3, 6-12, 14-24, 26 and 27 are presently pending in the above-identified application. Claims 1, 10, 16, 21, 24 and 26 are proposed to be amended herein.

Rejection of Claims under 35 USC § 112

The Office Action rejected claims 1-3, 4-12, and 14-27 under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In light of the present amendments to the pending independent claims, this ground of the rejection is respectfully traversed. In particular, Applicants have amended each pending independent claims to make clear that the claimed “measure of connectivity” is “...an indication of connectivity between the first communications network and the second communications network”.

Regarding the Examiner’s statement of “equating” Applicants’ claimed “measure of connectivity” with that of U.S. Patent No. 6,298,445 issued to A. Shostack et al. (hereinafter “Shostack”) at column 12, lines 47-55, Applicants respectfully disagree with such assertion. More particularly, the cited Shostack passage is directed to a network scan that produces a map of a particular network which is essentially an inventory of IP devices connected to the network. That is, the Shostack census is of devices and their connectivity to a single network not their connectivity between multiple networks. Applicants appreciate how the Examiner may have found similarities between the cited Shostack passage and Applicants’ claimed “census” but this is not Applicants’ claimed “measure of connectivity”. As detailed further hereinbelow, Applicants’ claimed “measure of connectivity” is an indication of connectivity between the first communications network and the second communications network which is determined from the response of the claimed probed host in receiving the claimed probe packet. Applicants trust the Examiner will appreciate, after considering the full discussion herein, these differences and find the pending claims clearly distinguishable from the cited passages in Shostack.

Rejection of Claims under 35 USC § 102

The Office Action rejected claims 1-3, 5-12 and 15-27 as being anticipated by Shostack. Applicants have amended the independent claims herein to more particularly claim the various aspects of the invention, and respectfully submit that each of the currently pending claims is patentably distinct from Shostack.

As outlined in the previous AMENDMENT submitted by the Applicants, heretofore, the well-known use of spoofed packets (by unauthorized users or hackers) is directed to gaining illegal entry into a secure system. In contrast, Applicants have realized that spoofed packets can serve different purposes (and non-malicious) by providing an enhanced security tool for discovering the connectivity between networks. This connectivity measure, in turn, can be used by system administrators to prevent malicious attacks (including but not limited to malicious spoofing). It is at least this aspect of Applicants' invention that stands in stark contrast to the cited Shostack passages (i.e., Shostack, column 12, lines 41-57; and column 13, lines 1-5), and anything else therein, in the instant rejection of Applicants' claims.

Specifically, in addition to the discussion of Shostack in the prior AMENDMENT, Applicants' respectfully submit that Shostack teaches a technique for testing for susceptibility to various so-called security vulnerabilities, such security vulnerability including IP spoofing. For example, Shostack at column 12, lines 50-55 describes an aspect of Shostack's technique which "...probes the ports of each of the IP devices for programs that contain security vulnerabilities that may be exploited...". Shostack's "security vulnerabilities", as referenced throughout such disclosure, are of the type listed in Shostack's Table 1 (see, e.g., Shostack, columns 5 and 6). While it is true that one such Shostack security vulnerability is a "check of the firewall for IP spoofing" (see, Shostack, column 5, lines 59-60) or "...assess the security vulnerabilities of a remote computer connected to the network..." (see, Shostack, column 13, lines 2-3), these are not disclosures which are fatal to the novelty of Applicants' claimed invention. That is, Shostack's teaching with regard to such IP spoofing is checking whether a

particular firewall (see, e.g., Shostack, firewall 12 in FIG. 1) or remote computer is vulnerable (susceptible) to IP spoofing.

In contrast, Applicants' claimed invention is directed to the determination of a security characteristic of a host (or hosts) associated with a first communications network wherein the security characteristic is a measure of connectivity between the first communications network and a second communications network. That is, the host (associated with a first network) is probed with a particular packet, where the packet includes a source address which is associated with the second communications network, and the connectivity measure is determined as function of a response from the probed host (see, e.g., Applicants' Specification, page 4, line 27 – page 5, line 6; and page 8, lines 20-22) to the packet. Said another way, Applicants' claimed invention is directed at discovering connectivity of, or between, a host machine (or host machines) not whether such host (or hosts) is susceptible to IP spoofing. To that end, employing the teachings of Shostack one would be able to determine that a host is not vulnerable to IP spoofing but not whether the network associated with such host has a level of connectivity with another network. It is the determination of such connectivity measure, using the probe packet configured in accordance with the invention, that is the contribution advanced by the Applicants hereto which are distinct from Shostack's teachings with respect to discovering a security vulnerability such as "susceptibility to IP spoofing".

As detailed above, Applicants find no teaching or suggestion in Shostack with respect to the aspect of Applicants' claimed invention directed to utilizing a probe packet to determine a connectivity measure between two communication networks (where the packet includes a source address which is associated with a second communications network) which can be used to identify potential unsecure or rogue connections between a probed host (of a first communications network) and some other host on a second communications network. As such, in view of the foregoing, Applicants respectfully submit that each of the currently pending independent claims, as amended, is patentably distinct from Shostack.

Applicants appreciate the Examiner's thoroughness in pointing out that the claimed invention does not specifically recite the term "spoofed probe packet" but fail to

fully understand the relevance. That is, Applicants' claimed invention does include the limitation of probing a host of a first communications network with a particular packet, where the packet includes a source address which is associated with a second communications network. Applicants have particularly pointed out and distinctly claimed the subject matter which Applicants regard as the invention. While such a recitation may be understood, in an embodiment of the invention, as a "spoofed packet", it may include other types of probe packets which have the claimed limitations of Applicants invention.

Regarding the rejection of each of the presently pending dependent claims these claims depend ultimately from one of the pending amended independent claims 1, 10, 16, 21 and 24 herein which Applicants submit are patentably distinct over Shostack for the aforesaid reasons. Thus, these dependent claims contain all the limitations of the pending amended independent claims from which they depend, and Applicants respectfully submit that these dependent claims are also patentably distinct over Shostack for the aforesaid reasons, as well as other elements these claims add in combination to their base claim.

In view of the foregoing, it is respectfully submitted that each of the currently pending claims in the application is in condition for allowance and reconsideration is requested. Favorable action is respectfully requested.

Should the Examiner believe anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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